

Attorney Docket No.: DEX-0075  
Inventors: Macina and Sun  
Serial No.: 09/618,596  
Filing Date: July 17, 2000  
Page 4

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or bodily fluid from a normal human control, wherein an increase in the levels of the CSG determined in step (b) as compared to levels of the CSG measured in a sample of cells, tissues or bodily fluid from a normal human control is associated with a cancer that is progressing and a decrease in the determined levels of the CSG in the first sample as compared to the second sample is associated with a cancer that is regressing or in remission.

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**REMARKS**

Claims 1 through 5 are pending in the instant application. Claims 1 through 5 have been rejected. Claim 1-3 have been amended. No new matter has been added by these amendments. Reconsideration is respectfully requested in light of these amendments and the following remarks.

**I. Rejection of Claims 1-5 under 35 U.S.C. § 112, second paragraph**

The rejection of claims 1-5 under 35 U.S.C. § 112, second paragraph, has been maintained, as the Examiner suggests that the recitation of CSG is indefinite. Accordingly, in an earnest to

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advance the prosecution of this case and in accordance with the Examiner's suggestion, Applicants have amended claim 1 to recite "colon specific gene (CSG)". Withdrawal of this rejection is therefore respectfully requested.

**II. Rejection of Claims 1-5 under 35 U.S.C. § 112, first paragraph**

Claims 1 through 5 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner suggests that Applicants did not point out in the amendment filed July 5, 2001, where support for amendments made to the claims can be found in the specification.

With respect to the phrases "a second sample of cells" and "first sample as compared to the second sample", it is respectfully pointed out that the claims 2 and 3 have been amended to delete these phrases. With respect to the phrase "comprising a polynucleotide sequence or its complement capable

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of hybridizing under stringent conditions with SEQ ID NO:1 or a polypeptide encoded thereby, support for this amendment is provided in the specification at page 3, lines 17-29, and page 7, lines 2 through 15.

Accordingly, withdrawal of this rejection is respectfully requested.

### **III. Rejection of Claims 1 and 2 under 35 U.S.C. § 102(b)**

Claims 1 and 2 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,733,748. Claims 1 and 2 have also been rejected under 35 U.S.C. § 102(b) as being anticipated by WO 96/39419. The Examiner suggests that these references disclose methods for diagnosing the presence of colon cancer and metastases of colon cancer which are based on determining the levels of a CSG comprising a polynucleotide sequence such as GCT (nucleic acid residues 9-11 and 13-15 of Figure 1 of these references) that would hybridize under stringent conditions with SEQ ID NO:1. Applicants respectfully traverse this rejection.

Contrary to the Examiner's suggestion, none of the 13 colon specific genes taught in the cited prior art references exhibit sufficient homology to the CSG of the present invention, namely

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SEQ ID NO:1, to hybridize under stringent conditions with SEQ ID NO:1. As evidence of this fact, Applicants are providing herewith a definition from the Life Sciences Dictionary of hybridization stringency. Hybridization stringency is defined as:

the percentage of nucleotides which must match on two unrelated single-stranded nucleic acid molecules before that will base pair with each other to form a duplex, given a certain set of physical and chemical conditions. . . .In general, if the percentage of matching nucleotides is lower than 70 percent, the two single-stranded nucleic acid molecules are considered nonhomologous and any hybridization is considered nonstringent.

Since the percentage of matching nucleotides of the colon specific genes taught in the cited prior art references and SEQ ID NO:1 of the instant invention is lower than 70 percent (see BLAST searches provided herewith), any hybridization occurring would be considered nonstringent by those of skill in the art. Accordingly, the prior art references do not teach a CSG comprising a polynucleotide sequence or its complement capable of hybridizing under stringent conditions with SEQ ID NO: 1 as claimed.

MPEP § 2131 is quite clear; to anticipate a claim, the reference must teach every element of the claim. Since the cited prior art references do not teach every element of the claims,

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they cannot anticipate the claimed invention. It is therefore respectfully requested that this rejection be withdrawn.

#### IV. Rejection of Claims 1-5 under 35 U.S.C. § 103(a)

Claims 1 through 5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,733,748 and WO 96/39419. The Examiner suggests that it would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to implement the methods of staging and monitoring colon cancer in a patient for changes in staging as well as for the onset of metastasis considering the methods of diagnosing the presence of colon cancer and metastases have been well established. Applicants respectfully traverse this rejection.

MPEP 2143 is clear; to establish a *prima facie* case of obviousness invention, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art

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reference must teach or suggest all the claim limitations.

As discussed in Section III, *supra*, neither of the cited prior art references teach the CSG of SEQ ID NO:1 nor a sequence that would hybridize under stringent conditions with SEQ ID NO:1. Nor is there any suggestion in these references of a CSG of SEQ ID NO:1 or a sequence that would hybridize under stringent conditions with SEQ ID NO:1. Accordingly, these references do not teach or suggest all the claim limitations. These references also provide no reasonable expectation of success that a CSG of SEQ ID NO:1 or a sequence that would hybridize under stringent conditions with SEQ ID NO:1 would be useful in diagnosing, monitoring staging and imaging cancer. There is also no motivation or suggestion provided in these references to modify their teachings to use a CSG of SEQ ID NO:1 or a sequence that would hybridize under stringent conditions with SEQ ID NO:1 to diagnose, monitor, stage or image cancer. Thus, the cited combination of references cannot render obvious the instant claimed invention.

Withdrawal of this rejection under 35 U.S.C. § 103(a) is therefore respectfully requested.

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**V. Supplemental IDS**

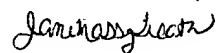
A Supplemental Information Disclosure Statement is being provided herewith for consideration by the Examiner.

**VI. Conclusion**

Applicants believe that the foregoing comprises a full and complete response to the Office Action of record. Accordingly, favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,



Jane Massey Licata  
Registration No. 32,257

Date: January 25, 2001

Licata & Tyrrell P.C.  
66 E. Main Street  
Marlton, New Jersey 08053

(856) 810-1515

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend the claims as follows:

1. (amended) A method for diagnosing the presence of colon cancer in a patient comprising:

(a) determining levels of a colon specific gene (CSG) comprising a polynucleotide sequence or its complement capable of hybridizing under stringent conditions with SEQ ID NO: 1, or a polypeptide encoded thereby, in cells, tissues or bodily fluids in a patient ; and

(b) comparing the determined levels of the CSG with levels of the CSG in cells, tissues or bodily fluids measured in a normal human control, wherein a change in determined levels of the CSG in said patient versus levels of the CSG measured in a normal human control is associated with the presence of colon cancer.

2. (amended) A method of diagnosing metastases of colon cancer in a patient comprising:

(a) identifying a patient having colon cancer that is not known to have metastasized;

(b) determining levels of a CSG comprising a



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polynucleotide sequence or its complement capable of hybridizing under stringent conditions with SEQ ID NO: 1, or a polypeptide encoded thereby, in a ~~first~~ sample of cells, tissues or bodily fluid from said patient; and

(c) comparing the ~~determined~~ levels of the CSG determined in step (b) with levels of the CSG measured in a ~~second~~ sample of cells, tissues or bodily fluid from a normal human control, wherein an increase in ~~determined~~ levels of the CSG ~~in the first sample~~ determined in step (b) as compared to ~~the second sample~~ levels of the CSG measured in a sample of cells, tissues or bodily fluid from a normal human control is associated with a cancer that has metastasized.

3. (amended) A method of staging colon cancer in a patient having colon cancer comprising:

(a) identifying a patient having colon cancer;  
(b) determining levels of a CSG comprising a polynucleotide sequence or its complement capable of hybridizing under stringent conditions with SEQ ID NO: 1, or a polypeptide encoded thereby, in a ~~first~~ sample of cells, tissues or bodily fluid from said patient; and

(c) comparing the ~~determined~~ levels of the CSG determined in step (b) with levels of the CSG measured in a

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~~second~~ sample of cells, tissues or bodily fluid from a normal human control, wherein an increase in the ~~determined~~ levels of the CSG ~~in the first sample determined in step (b)~~ as compared to ~~the second sample~~ levels of the CSG measured in a sample of cells, tissues or bodily fluid from a normal human control is associated with a cancer that is progressing and a decrease in the determined levels of the CSG in the first sample as compared to the second sample is associated with a cancer that is regressing or in remission.



# Search Results

Search Terms:

AND ☒

Search Definitions:

☐ Contains this ☐ Begins with this

Find Words!

Clear Form

Searching Category	User input query
Searched Word	hybridization
Number of Results	14

## 1. 1. colony hybridization

### Definition:

A genetics lab technique used to identify which colonies of bacteria on an agar plate contain a particular sequence of DNA or a particular gene. The technique involves pressing a nylon or nitrocellulose membrane onto the plate so that each colony contributes a small smudge of itself to the membrane, then treating the membrane with chemicals and heat, then washing the membrane with a labeled probe to find the specific DNA sequence. The smudges which are indicated by the probe are then compared back to the colonies on the agar plate. This technique is often used in conjunction with experiments involving the making of genomic libraries.

## 2. competition hybridization

### Definition:

A lab technique used to determine how similar two strands of single-stranded nucleic acids are to each other by putting them with a third strand (called a standard) and observing how well they can bond with each other to become double-stranded (how well they hybridize).

## 3. cross-hybridization (cross hybridization)

**Author:** Susan A.Hagedorn

### Definition:

The hydrogen bonding of a single-stranded DNA sequence that is partially but not entirely complementary to a single-stranded substrate. Often, this involves hybridizing a DNA probe for a specific DNA sequence to the homologous sequences of different species.

## 4. DNA hybridization

### Definition:

A lab technique used to find out how closely related two or more separate strands of DNA from different species are to each other. The technique involves radioactive labeling.

## 5. DNA-RNA hybridization

**Definition:**

A type of hybridization. In this case, a strand of DNA is joined with a complementary strand of RNA to form a double-stranded molecule (or one which is partly double-stranded, if one of the original single strands is shorter than the other).

**6. FISH (fluorescence in situ hybridization)****Definition:**

A physical mapping approach that uses fluorescent tags to detect hybridization of probes with metaphase chromosomes and with the less-condensed somatic interphase chromatin.

**7. hybridization****Definition:**

1. The process of joining two complementary strands of DNA or one each of DNA and RNA to form a double- stranded molecule.
2. The mating of individuals from different species or sub-species.

**8. hybridization stringency****Definition:**

The percentage of nucleotides which must match on two unrelated single-stranded nucleic acid molecules before they will base pair with each other to form a duplex, given a certain set of physical and chemical conditions. The hybridization stringency is used to determine when a hybridization probe and a target nucleic acid will come together, and can be set by the researcher by varying the conditions. In general, if the percentage of matching nucleotides is lower than 70 percent, the two single-stranded nucleic acid molecules are considered nonhomologous and any hybridization is considered nonstringent.

**9. in situ hybridization****Definition:**

Use of a DNA or RNA probe to detect the presence of the complementary DNA sequence in cloned bacterial or cultured eukaryotic cells.

Also used for locating genes on chromosomes. The process is:

1. Prepare microscope slide with cells in metaphase of mitosis.
2. Treat slide with a weak base. Thus denaturing the DNA.
3. Pour radioactively labeled probe onto the slide.
4. Expose slide to photographic emulsion for a few days or weeks.
5. Develop emulsion.

**10. introgressive hybridization****Definition:**

The incorporation into a population's gene pool of genes from a different species.

**11. Northern blot (Northern hybridization, Northern blotting)****Definition:**

A technique similar to Southern blotting, though it is used for RNA. In this technique, RNA fragments are transferred from an agarose gel to a nitrocellulose filter, where the RNA is then hybridized to a radioactive probe.

**12. probe (hybridization probe)****Definition:**

A single-stranded nucleic acid molecule with a known nucleotide sequence which is labeled in some way (for example, radioactively, fluorescently, or immunologically) and used to find and mark certain DNA or RNA sequences of interest to a researcher by hybridizing to it.

**13. Southern blot (Southern hybridization, Southern blotting)****Definition:**

A technique used for searching for a specific DNA fragment. The process is as follows:

1. Separate DNA fragments by gel electrophoresis
2. change pH of gel to basic, thus allowing disruption of H-bonds
3. blot gel with nitrocellulose paper
4. heat paper so as to fix DNA fragments
5. probe with labeled messenger RNA or cDNA
6. wash
7. complementary mRNA/cDNA fragments will have hybridized.

**14. Western blot (Western hybridization, Western blotting)****Definition:**

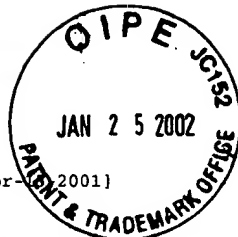
A technique similar to Southern blotting, though it is used for proteins.

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*END*

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DEX0075\_1\_vs\_wo9639419\_blastn

1

BLASTN 2.2.1 [Apr 1 2001]

Reference: Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schaffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

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>AAT45881 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF

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2

06-JUN-1995 Human colon specific gene CSG2  
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# DEX0075\_1\_vs\_wo9639419\_blastn

3

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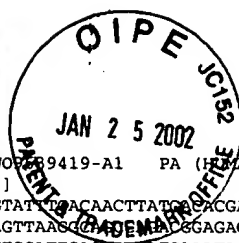
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DEX0075\_1\_vs\_wo9639419\_blastn

4

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wo9639419.nt

1

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CACCGAAAAA  
>AAT45888 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG9 cDNA full-length clone. [Homo sapiens.]  
AAGCTCTTCTCACAGGACCAGCCACTAGCGCAGCTCGAGCGATGGCCATTATGTCCCGCAC  
CGGGCTACCAGCCACCTACAACCCGACGCTGCCTTACTACCAGCCATCCCGGGCGGGC  
TCAAGTGGGAATGTCTGTTTACATCCAAGGAGTGCCAGCAGCAGACATGAAGCGGTTCT  
TCGTGAACCTTTGTGGTTGGGAGGATCCGGCTCAGACGTGCGCTTCCACTTCAATCCGC  
GGTTTGACGGCTGGGACAAGGTGGTCTTCAACACGTTGCAGGGCGGGAAGTGGGCGAGCG  
AGGAGAGGAAGAGGAGCATGCCCCTCAAAAAGGGTGCCGCTTTGAGCTGGTCTTCATAG  
TCCTGGCTGAGCACTACAAGTGGTGGTAAATGGAATCCCTTCTATGAGTACGGGCACC  
GGCTTCCCTACAGATGGTCAACCCAGTGAAGTGGGATCTGCAACTTCAATCAA  
TCAACTTATCGGAGGCCAGCCCCCTCCGGCCCCAGGGACCCCGATGATGCCACTTACC  
CTGGTCCCGGACATTGCCATCAACAGCTGAACAGCCTGCCACCATGGAAGACCCCCAA  
CCTTCAACCCGCTGTGCCATATTTCCGGAGGCTGCAAGGAGGGCTCACAGCTCGAAGAA  
CCATCATCATCAAGGGCTATGTGCTCCCAAGGCAAGAGCTTTGCTATCAACTTCAAG  
TGGGCTCTCAGGGGACATAGCTCTGCACATTAATCCCGCATGGGCAACGATCCGTGG  
TCCGGAACAGCCTTCTGAATGGCTCGTGGGATCCGAGGAGAAGAAGATCACCCACAACC  
CATTTGGTCCCGACAGTTCTTTGATCTGCTCCATTCGCTGTGGCTTGGATCGCTTCAAG  
TTTACGCAATGGCCAGCACCTCTTGAATTTGCCATTCGCTCTCGGCTTCCAGAGGG  
TGGACACATTGGAATCCAGGGTGTATGTCACCTTGTCTATGTCCAGATCTAATCTATT  
CTGGGCCATAAATCATGGGAAACAGAAATATCCCTAGGACTCCTTTCTAAGCCCTTA  
ATAAATGTCTGAGGGTGTCTCAAAAAA  
>AAT45889 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG10 cDNA partial clone. [Homo sapiens.]  
GTTGATATTAACACAGTGAAACCAACATGACACCTCTCTGAAACCTATTAGTGTCTCC  
TACAACCCAGCCACAGCAAGAAATATCAATGTGGGCATTCTTCCATGTAAATTTT  
GAGGACAACGATAACCGATCAGTGTGAAAGGTGGTCTTCTCTGACAGCTACAGGCTC  
TTTCAGTTCCATTTTCACTGGGGCAGTACAATGAGCATGGTTCAGAACATACAGTGGAT  
GGAGTCAAAATATTCTGCCAGCTTCAAGTGGCTCACTGGAATTTGCAAAAGTACTCCAGC  
CTTGTGTAAGCTGCTCAAGGCTGATGGTTTGGCAGTTATGTTGTTTGTGATGAAGGTT  
GGTGAAGCCAAACCAAGCTGCAGAAAGTACTTGTATGCCCTCCAAGCAATTAACCAAG  
GGCAACAGAGCCCATTCACAAATTTTGACCCCTCTACTCTCTCTTCTTCTATCTCTGGAT  
TTCTGGACCTACCTGGCTCTGACTCATCTCTCTTTATGAGAGTGAACCTGGATC  
ATCTGTAAGGAGAGCATCAGTGTCAAGTTCAGAGCAGTGGCACAATCCGGAGCCTCTTA  
TCAAT  
>AAT45891 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG12 cDNA partial clone. [Homo sapiens.]  
GTGCGAGAAGAAAGATAGGTTGGAGACAATTGATTGCTCGATGATATAAAATGTTAAGTA  
CCATGAATGNATGCTGTTAGGCTGGAATGCGCCAAAGATAAAAGGTGGGGCATGGCATCAA  
AAGGTAGGTCAACATATTAATAATTCCATGTATTGAAATATCCAGAAAAATATAGACA  
GATCTATAGAGATAGAACTGGTCTGCCAGGACTAGGGGTTGTCTAAGGATAAGGAGCT  
TCTTTTGTGGATGGTGAATAACCTAAATATATTGTCCTATTGTTGCAACAATTTGTG  
GAATATATTAACCCGGTTAATGTACTCACTAAATGTCTCTCTCTTAAATTTAAGC  
GTTTNTCTGGACAAGAAAAGGAAAGNACCAAGGGGNA  
>AAT45892 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG13 cDNA partial clone. [Homo sapiens.]  
GCCCTGGGCTTTGGGGGGTCCCAACATGGTATGCAGAAATGTGATGGTTACAGGTCAG  
TACAACCTCAGTCTTAGAACCTCCACACTCAGCTCTGCACCCACTTCTCTGTCTATT

TATTATATAGGACTGTAGTCTTTTCTAGTTCGAGAGCCTTTCGAAGCTTAATTTATATT  
CTTTCTTTGTACCTTTTCTAAAATTACCAAAGATATTACACAAGGTAATTAATGTT  
CTCTGTTTATGCTTTATCTGTATGGAGCAAAATATCCTCTTATTGTTGATCAAAGGGGCG  
AAAAGAAATTTAGAGGCAAAATGAACAAGCGATAGGCTATTGCAACCTGAGAAAGAGAACTG  
NTCCCTTCCATCGTAAATTTAGNAGNCCAAAGTAGGTAATGGGAACCAAAGTTGTTACTTTT  
TCTAGTAGTATTTTCCCTTTTNNNTTTTGTGGTACCTCTTACAGNCCCAAAT  
CCATTCTCTTTAAAGGGGTTTATGGGGCGCTTACTGCAGGTTAAAAATGGGGNCCAC  
CATTTTAAAGGGGGCTACCAGAAGGGAGGGGGTCCCNNTNCNAAAAAAAATTG

>AAT45880 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG1 partial cDNA clone. [Homo sapiens.]

GCCAGGCAGCTGGCTGCCSACCAGGCCGTGTATGTGAAGGTCAAGGCTGAAGCCCGGAA  
CTGCTGGGCCACCCGCTGCTCTGTGTCTGTCTGTGGGTGCCAACTCACCACCTTTGAT  
GGGGCCCGTGGTGCCACCACCTCTCTGTGTCTATGAAGCTCTCTTCCCGCTGCCAGGA  
CTACAGAAATACCATCCCTGGTACCGTGTAGTTGCCGAAGTCCAGATCTGCCATGGCAAA  
ACGGAGGCTGTGGGCCAGGTCCACATCTCTTCCAGGATGGGATGGTGACGTTGACTCCA  
AACAAGGGTGTGTGGGTGAATGGTCTCCGAGTGGATCTCCAGCTGAGAAGTTAGCATCT  
GTGTCCGTGAGTCTGTACACCTGTATGGCTCCCTGTAGTCCGCCAGAAGCGAGGGTCCAG  
GTGTGGCTTGGAGCAATGGGAAGGTGGCTGTGATTGTGAGCAATGACCATGCTGGGAAA  
CTGTGTGGGGCCTKTGGAAATTTGACGGGGGACCAGACCAATGATTGGGATGATCCCC  
AGGAGAAGCCAGCGATTGGGGAATGGAGAGCGCAGGGACTTCTYCCMCATGTTAATGG  
GCTTGWTCAGTTCATCCACCAGGAACGAAGGATTTT

>AAT45881 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG2 fragment. [Homo sapiens.]

CAGGACTGCGTGTGCACGGACAAGGTGGACAACAACCCCTGCTCAACGTCATCGCCTGC  
ACCCACGTGCCCTGCAACACCTCTCTGACGCCCTGGGTTCGAACCTCATGGAGGCCCGGG  
GAGTGTCTGAAGAAGTGTGAACAGACGCACTGTATCATCAAACGCCCGACAACCAGCAC  
GTCATCTTGAAGCCCGGGGACTTCAAGAGCGACCCGAAGAACAACCTGCACATTTCTCAGC  
TGCGTGAAGATCCACAACACGCTCATCTCGTCCGTTTCCAACATCACCTGCCCAACTTT  
GATGCCAGCATTTGTCATCCCGGCTCCATCACATTCATGCCCAATGGATGCTGCAAGACC  
TGCACCCCTCGCAATGAGACCAGGGTGGCTTCTTCCACCGTCCCGTCAACACGGAGGTT  
TCGTACGCCGCTGCACCAAGACCGTCTCATGAATCATTTGCTCCGGTCTTCCGGGACA  
TTTGTCTATGTACTCGGCCAAGGCCAGGCCCTGGACCACAGCTGCTCTGTGCAAGAG  
GAGAAAACCGCCAGCGTGAGGTGGTCTGTAGCTGCCCAATGGCGGCTCGCTGACACAC  
ACCTACACCCACATCGAGAGCTGCCAGTGGCAGGACACCGTCTGCGGGCTCCCCACCGGC  
ACCTCCCCCGGGCCCGCGCTTCCCTTAGGCATCTGGGAGCGGGTGAAGCGGGTGGGCA  
CAGCCCCCTTACTGCCCCGACAGCTTTACCTCCCCGGACCCCTCTGAGCCTCCTAAGCT  
CGGCTTCTCTCTTCAATATTTATTTGTCTGAGTTTGTGTCAGTCTTGTCTTCCAATA  
ATAAACTCAGGGGACATGCAAAAAA

>AAT45883 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG4 cDNA partial clone. [Homo sapiens.]

ATGAGTCTCTGTGAATAACAATGTGGGCAGAGCCCTAAACATCGCCCTGGTGAATGGAACC  
ACGGGAGCTGTGCTGGGACAGAAGGCATTTGACATGTACTCTGGAGATGTTATGCACCTA  
GTGAAATTCCTTAAAGAAATTCGGGGGGTGCACTGGTGTCTGGTGGCTCTTACGACGAT  
CCAGGGACCAAAATGAACGATGAAAGCAGGAACTCTTCTCTGACTTGGGCAGTTCCTAC  
GCAAAACAATGGGCTTCCGGGACAGCTGGGTCTTTCATAGGAGCCAAAGACCTCAGGGGT  
AAAAGCCCTTTTGAAGCTTCTTAAAGAACAGCCAGACACAAACAAATACGAGGGATGG  
CCAGAGCTGCTGGAGATGGAGGGCTGCATGCCCCGAAGCCATTTTAGGGTGGCTGTGGC  
TCTTCTCAGCCAGGGGCTGAAGAAGTCTGCTGCTGCAATAGGAGTCANAGCCCGGACG  
GCTGNAGGAGGAGGAGCAGGGGGTGTGCTGCTGGAAGGTGCTGCAGGCCCTTGCACGCTGTG  
TCGCGCCT

>AAT45886 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG7 cDNA partial clone. [Homo sapiens.]

TAAACTTGCTGTTTTGTCTGTGTCTTTGTCTTTGGTTGGTATTTTCAGTAAGTTTGGT  
ATTCTCAAATTTTATCTAAATGGATAAACTATTAACTAGAACATAAACCCCAATTCTCC  
ATTTTCATTTTCTCTTAGGCATGAATCATACAAAACCTCAATATAGAGCAATGTTGTAAAT  
GAATTGTTCTATTAAACAAGAGGAGGTTCTAAGATATAAGCCCTCAGAGAACAGGAAGAA  
AAGGCGGTCCATAGAAGATGAGGTCTAACCGGAAGATGCTGCTGAGAAGCGAGAC  
AGATGTGAAGAATCTATCACCCAGTCACTGTGCACTGAATGTTCCACTGAAGTGGCAGT  
TTACGACAAGGATGAAGTCTTTCATTTTCAATGTTTTCAGCAAGCCATTCTTAACAGC  
CCAATGCAATTTAATTACCCAATCTGTATATAAGGCAATATGGACAGTTACTTTCTCT  
CTTGCTGTTTCATATCTTCACTGACATTTAGGAAGCAGTGTCTCTTTTAAAGGGGA  
ATAGTTGTCAACCTTCATTCATCTTACATCTTTCACCTCTCTCTTTTCTTTCTTTG  
ATTTTCCCCCTTATTGATGGGACTGATATTCAATCTGTTTTGTGATGAACATTTGGAACAT  
GTCGGGCTTTTATTAAGCTCTGTAGAATTAAATGTTCTGGAATTAT

>AAT45890 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG11 cDNA partial clone. [Homo sapiens.]

CGGCTCCGGGCGGGCGTGGCCAGTGACTAGAAGGCGAGGCGCCGCGGGACCATGGCGGCG  
GCGGCGGACGAGCGGAGTCCAGAGCGAGAAGACGAGGAAGAGGAGGAGCAGTTGGTCTCT  
GGTGAATTTATCAGGAATTTATGATTCAGACTTCTCTCAAAATGTGAAAAATAATGCAA  
GGTTTGGGCATTGACACTGAGAGGCCCATCTCTGGCAATGGACAGCTGTGTCTTGTCTGG  
GGAGTATGAAGACACTCTAGGACCTGTGTATATTGAAGAAAATGTTGAACATGCTGA  
TACAGAAGCAATAATAAAACAGTGTCTAAATATAAATGCCATACAAATGAAGAAGCTCAG  
CATGACAAGAACTCTCTGACAGAGAAGGAAGGAAGAAACATAGGTGGGGTGGAA  
ATGGCTGCAAAATAAGGATATGGTTCTCCCTTTGACCCAACAGGTTTGTAACTTTTCTA  
CCATGAAATTTAGGACGAGGAAGTGGTAGCTTTTCCAGCCCGTTAAATCTTTGGATTGGG  
AGGGGGTGGGGTTCAATG

>AAT45882 WO9639419-A1 PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Human colon specific gene CSG3 fragment. [Homo sapiens.]

ATTGGTGTCTACCTGGCTCTCTGTCTCTGACGCTCTACAGGTGAGGCCACGACAGAGGGAG  
TAGGGCTCGCCATGTTTCTGGTGTGAGCAATTTGGCTGATCTTGGCTGTCTGAACAGCTAT  
TGGGTCCACCCAGTCCCTTTTCACTGCTGTCTTAAATGCCCTGCTCTCTCCCTGGCCACC  
TTATAGAGAGCCAAAGAGCTCTGTGAAGGGGAGAACTCTATCTGTGGTTTATAATCTT  
GCACGAGGCACCAAGTCTCCCTGGGTCTTGTGAATGAACATACATTTATCCCTTTCTCT  
GCCCAACCAACAACCTCTTCTCTCAAGAGGGGCTGCTGGTTCCCTCCACCCAACCTGC  
ACCATGAGATCGGTCCAAGAGTCCATTTCCAGGTGGGAGCCAACTGTCAAGGAGGCTCTT  
TCCCAACCAACATCTTTCAGTTGCTGGGAGGTGACCATAGGGCTCTGCTTTTAAAGATAT  
GGCTGCTTCAAGGCCAGAGTACAGGAAGGACTTCTTCCAGGAGATTAGTGGTGATGG

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AGAGGAGAGTTAAAAAGACCTCATGTCCTTCTTGTCACGGTTTGTGAGTTTTCACCTC  
TTCTAATGCAAGGGTCTCAGACTGTGAACCACTTAGGATGTGATCACTTTCAGGTGGCCA  
GGAATGTTGAATGTCTTTGGCTCAGTTCATCTAAAAAGATATCTATTTGAAAGTTCTCA  
GAGTTGTACATATGTTTCACAGTACAGGATCTGTACATAAAAGTTCTTTCTTAAACCAT  
TCACCAAGAGCCAATATCTAGGCATTTCTCGGTAGCACAAATTTCTNATGCTTAGAA  
AATTGTCCTCCCTGTTCTTTCTGTCTGNAGACTTAAGTGAGTTAGGTCTTTAAGGAAAGC  
AACGCTCCTCTGAAATGCTTGTCTTTTCTGTGTCGCGAAATAGCTGGTCTTTTCTGGG  
AGTTAGATGTATAGAGTGTGTTGTATGTAAACATTTCTTGTAGGCATCACCATGAACANAG  
ATATATTTTCTATTTANTTANTATATGTGCACTTCAAGAAGTCACTGTCAGAGAAATAAA  
GAATTGTCTTAAATGTCATGATTTGGAGATGTCCTTTGCATTGCTTGGAAAGGGGTACCT  
AGAGCCAAGGAAATTGGCTCTGGTTTGAAAAATTTTGCTGTTATTATAGTAAACATACA  
AAGGATGTC

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DEX0075\_1\_vs\_us5733748\_blastn

1

BLASTN 2.2.1 [Apr 12-2001]

Reference: Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schaffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

Query= DEX0075\_1  
(2609 letters)

Database: us5733748.nt  
15 sequences; 9317 total letters

Searching.done

Sequences producing significant alignments:	Score (bits)	E Value
AAV16668 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	26	0.29
AAV16676 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	26	0.29
AAV16669 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	24	1.2
AAV16680 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	22	4.6
AAV16677 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	22	4.6
AAV16674 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	22	4.6
AAV16671 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1...	22	4.6

>AAV16668 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 638

Score = 26.3 bits (13), Expect = 0.29  
Identities = 13/13 (100%)  
Strand = Plus / Plus

Query: 825 actcaccaccttt 837  
|||||||  
Sbjct: 105 actcaccaccttt 117

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 606 gatggctccct 616  
|||||||  
Sbjct: 382 gatggctccct 392

>AAV16676 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 1121

Score = 26.3 bits (13), Expect = 0.29  
Identities = 13/13 (100%)  
Strand = Plus / Plus

Query: 1163 ggaagtggggcag 1175  
|||||||  
Sbjct: 286 ggaagtggggcag 298

Score = 26.3 bits (13), Expect = 0.29  
Identities = 13/13 (100%)  
Strand = Plus / Minus

Query: 1339 ggattgaagtgga 1351  
|||||||  
Sbjct: 238 ggattgaagtgga 226

Score = 24.3 bits (12), Expect = 1.2  
Identities = 12/12 (100%)  
Strand = Plus / Minus

Query: 990 tttgaaggcat 1001  
|||||||  
Sbjct: 329 tttgaaggcat 318

>AAV16669 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF

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## DEX0075\_1\_vs\_us5733748\_blastn

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06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 874

Score = 24.3 bits (12), Expect = 1.2  
Identities = 12/12 (100%)  
Strand = Plus / Minus

Query: 69 gtaggtgtgtgt 80  
|||||||  
Sbjct: 606 gtaggtgtgtgt 595

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Minus

Query: 1001 tccccctgagt 1011  
|||||||  
Sbjct: 855 tccccctgagt 845

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 2519 agtgtgaacag 2529  
|||||||  
Sbjct: 134 agtgtgaacag 144

>AAV16680 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 600

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 620 ctccattctct 630  
|||||||  
Sbjct: 479 ctccattctct 489

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 1140 atgaacaagcg 1150  
|||||||  
Sbjct: 319 atgaacaagcg 329

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Minus

Query: 2192 gaaaaataact 2202  
|||||||  
Sbjct: 438 gaaaaataact 428

>AAV16677 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 605

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Minus

Query: 2120 agcttcagcaa 2130  
|||||||  
Sbjct: 312 agcttcagcaa 302

>AAV16674 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 709

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Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Minus

Query: 1180 tcttttgtaaat 1190  
          |||||  
Sbjct: 201 tcttttgtaaat 191

>AAV16671 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF  
06-JUN-1995 Polynucleotide sequence of a colon-specific  
gene. [Homo sapiens.]  
Length = 548

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Minus

Query: 78 tgtttttcaca 88  
          |||||  
Sbjct: 19 tgtttttcaca 9

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 1106 tgttatgcacc 1116  
          |||||  
Sbjct: 108 tgttatgcacc 118

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 512 gctggtggcct 522  
          |||||  
Sbjct: 159 gctggtggcct 169

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 2146 agttcttaaag 2156  
          |||||  
Sbjct: 317 agttcttaaag 327

Score = 22.3 bits (11), Expect = 4.6  
Identities = 11/11 (100%)  
Strand = Plus / Plus

Query: 1577 ggagatggagg 1587  
          |||||  
Sbjct: 372 ggagatggagg 382

Database: us5733748.nt  
Posted date: Jan 24, 2002 1:37 PM  
Number of letters in database: 9317  
Number of sequences in database: 15

Lambda	K	H
1.37	0.711	1.31

Gapped Lambda	K	H
1.37	0.711	1.31

Matrix: blastn matrix:1 -3  
Gap Penalties: Existence: 5, Extension: 2  
Number of Hits to DB: 19  
Number of Sequences: 15  
Number of extensions: 19  
Number of successful extensions: 19  
Number of sequences better than 10.0: 8  
length of query: 2609  
length of database: 9317

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effective HSP length: 12  
effective length of query: 2597  
effective length of database: 9137  
effective search space: 23728789  
effective search space used: 23728789  
T: 0  
A: 40  
X1: 6 (11.9 bits)  
X2: 15 (29.7 bits)  
S1: 12 (24.3 bits)  
S2: 11 (22.3 bits)



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us5733748.nt

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>AAV16681 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 PCR primer used to amplify cloned colon-specific genes. [Homo sapiens.]  
ATGCTTCCGGCTCGTATG

>AAV16682 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 PCR primer used to amplify cloned colon-specific genes. [Homo sapiens.]  
GGGTTTCCAGTCACGAC

>AAV16670 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
ATTGGTGCTACCTGGCTCTCCTGTCTCTGCAGCTCTACAGGTGAGGCCAGCAGAGGGAG  
TAGGGCTCGCCATGTTTCTGGTGAGCCAAATTGGCTGATCTTGGGTGCTGAACAGCTAT  
TGGGTCCACCCAGTCCCTTTTCAGCTGCTGCTTAATGCCCTGCTCTCTCCCTGGCCACCC  
TTATAGAGAGCCCAAAGAGCTCCTGTAAGAGGGAGAACTCTATCTGTGGTTTATAATCTT  
GCACGAGGCACCAAGTCTCCCTGGGTCTTGTGAATGAACATACATTATCCCTTTCTCT  
GCCCAACCCAACTCTTTCTCTCAAAGAGGGCTGCCTGGTTCCCTCCACCCCACTGC  
ACCATGAGATCGGTCCAAGAGTCCATTTCCCAAGTGGGAGCCAACTGTCAGGGAGGTCTT  
TCCCAACCAACATCTTTTCAGTTGCTGGGAGGTGACCATAGGGCTCTGCTTTTAAAGATAT  
GGCTGCTTCAAAGGCCAGAGTCACAGGAAGGACTTCTTCCAGGGAGATTAGTGGTGATGG  
AGAGGAGAGTTAAATGACCTCATGTCTCTTGTGCCCGTTTGTGAGTTTTCACCT  
TTCTAATGCAAGGGTCTCACACTGTGAACCACTTAGGATGTGATCATTTCAGGTGGCCA  
GGAAATGTTGAATGCTTTGGCTCAGTTTCATCTAAAAAGATATCTATTGAAAGTTCTCA  
GAGTTGTACATATGTTTACAGTACAGGATCTGTACATAAAAGTTTCTTTCTAAACCAT  
TCACCAAGAGCCAAATATAGGCATTTCTCGGTAGCACAAATTTCTTATGCTTAGAA  
AATTGCTCTCCTGTTCTTCTGTCTGNAGACTTAAGTGAGTTAGGCTTTAAGGAAAGC  
AACGCTCCTCTGAAATGCTTGTCTTTTCTGTGGCCGAAATAGCTGGTCTTTTTCGGG  
AGTTAGATGTATAGAGTGTGTTGATGTAAACATTTCTTGTAGGCATCACCATGAACANAG  
ATATATTTCTATTANTANTATATGTGCACTTCAAGAGTCACTGTGAGAAATATAA  
GAATTGCTTAAATGTCATGATGGAGATGCTCTTGCATTGCTTGGAAAGGGGTGACCT  
AGAGCCAAGGAAATGGCTCTGGTTTGGAAAAATTTGCTGTATTATAGTAAACATACA  
AAGGATGTC

>AAV16671 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
ATGAGTCTGTGAAAAACAATGTGGGCAGAGGCCATAACATCGCCCTGGTGAATGGAACC  
ACGGGAGTGTGCTGGGACAGAGGCATTTGACATGTACTCTGGAGATGTTATGCACCTA  
GTGAATTTCTTAAAGAAATTCGGGGGGTGCCTGGTGGTGGCTCCTACGACGAT  
CCAGGGACCAAAATGAACGATGAAAGCAGGAACTCTTCTCTGACTTGGGGAGTTCTCTAC  
GCAAAACAACCTGGGCTTCCGGGACAGCTGGGTCTTCATAGGAGCCAAAGACCTCAGGGGT  
AAAAGCCCTTTGAGCAGTTCTTAAAGAACAGCCAGACACAAACAAATACGAGGGATGG  
CCAGAGCTGTGAGATGGAGGGCTGCATGCCCGCAAGCCATTTAGGGTGGCTGTGGC  
TCTTCTCAGCCAGGGGCTGAAGAAGTCTCTGCTGCTGATAGGAGTCANAGCCCGCAG  
GCTGNAGAGGAGGAGCAGGGGGTGTGCTGGAAGGTGCTGCAGGCCCTTGCACGCTGTG  
TCGGCGCT

>AAV16672 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
TGCTACTCAAGGTATTTCAACAATTATGACACGAATGGTAGATACAGTGTAAAAGTGCG  
GGCTCTGGGAGGAGTTAACGACGCCAGAGCGAGAGTGATACCCAGCAGAGTGGAGCACT  
GTACATACCTGGCTGGATTGAGAAATGATGAAATACAATGGAATCCACCAAGACCTGAAAT  
TAATAAGGATGATGTTCAACACAAGCAAGTGTTTCAGCAGAACATCCTCGGAGGCTC  
ATTTGTGGCTTCTGATGTCCCAATGCTCCCATACCTGATCTTCTCCACCTGGCCAAAT  
CACCGACCTGAAGGCGGAAATTCAGGGGGCAGTCTCATTAATCTGACTTGGACAGCTCC  
TGGGGATGATATGACCATGGAACAGCTCACAAGTATATCATTCGAATAAGTACAAGTAT  
TCTTGATCTCAGAGACAAGTTCAATGAATCTCTTCAAGTGAATACTACTGCTCTCATCCC  
AAAGGAAGCCAACTCTGAGGAAGTCTTTTGTGTTAAACCAGAAAACATTACTTTTGAAA  
TGGCAGAGATCTTTTCATTGCTATTCAGGCTGTTGATAAGGTGATCTGAAATCAGAAAT  
ATCCAACATTGCACGAGTATCTTTGTTTATCTCCACAGACTCCCGCAGAGACACCTAG  
TCCTGATGAAACGCTGCTCCTTGTGCTAATATTCATATCAACAGCACCATTCTTGGCA  
TTCACATTTTAAAAATATGTTGGAAGTGGGTAGGAGAACTGCAGTTGTCAATAGNCTAGG  
GGTGAATTTTGTGCGGTGAATAAATAATSATTTTTCANCTTTTGTGRTTTATAAAAAA  
CGGNTNCCCATTTGGGNNNTNNGNGGGGGGNNNTTAA

>AAV16673 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
AGTCGCTCTCTAGCCCTTCTCTGTGCCTCACCTCTGGCAATGCCATTACGGCCAGGTC  
TTCTCTCTATAGTGGAGAGTATGGAGGTGGTGGGAAAGCGATTTCTCTATTCTGGCAA  
CCAGTTGGACGGCCCATCACCGCCCTCCGGGTCAGTCAACACATACTACATCGTAGG  
TCTTCAGGTGCGCTATGGCAAGGTGTGGAGCGACTATGTGGTGGTGCACCGGAGACCT  
GGAGGAGATCTTTCTGCACCTGGGGAATCAGTGATCCAGGTTTCTGGGAAGTACAAGTG  
GTACCTGAAGAACTGGTATTGTGACAGACAAGGGCCGCTATCTGTCTTTTGGGAAAGA  
CAGTGGCACAAGTTTCAATGCGCTCCCTTGCACCCCAACACCGTGTCCGCTTCATCAG  
TGGCCGGTCTGGTTCTCTCATCGATGCCATTGGCCTGCACTGGGATGTTTACCCCACTAG  
CTGCAGCAGATGCTGAGCCTCTCTCTTGGCAGGGGCACTGTGATGAGGAGTAAGAACT  
CCTTATCACTAACCCCATC

>AAV16674 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
TAAACTTGCTGTTTGTGTTCTGTCTTGTCTTTGGTTGGTATTTCAGTAAGTTTGGGT  
ATTCTCAAAATTTATCTAAATGGATAAACTATTAACTAGAACATAAACCCCAATTTCTCC  
ATTTCAATTTTCTCTTAGGCATGAATCATACAAAACTCAATATAGAGCAATGTTGTAAAT  
GAATTGTTCTATTAAACAAGAGGAGGTTCTAAGATATAAGCCCTCAGAGAACAGGAAGAA  
AAGCGGGTCCATAAGAAGATGAGGTCTAACCGGGAAGATGCTGCTGAGAAGGCAGAGAC  
AGATGTGGAAGAAATCTATCACCCAGTCATGTGCACTGAATGTTCCACTGAAGTGGCAGT  
TTACGACAAGGATGAAGTCTTTCAATTTTCAATGTTTACGAAGCCATTCTTAAACAGC  
CAAACCTGGCATTAAATACCAATACCTGATATATAAGGCAAAATATGGACAGTTACTTTCTCT  
CTTGCTGTTCTATATCTTTCAGTGACATGAGGAAGCAGTGTCTCTTTTAAAGGGGA  
ATAGTTGTCAACCTTCATTCATCTCTTACATCTTTACCCCTCTCTTTTCTTTCTTTG  
ATTTTCCCTCTTATGATGGGACTGATATTCTGTTTGTGATGAACATTTGGAAACT  
GTCGGGCTTTTATTAAGCTCTGTAGAATTAATATGTTCTGGAATTAT

>AAV16675 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Homo sapiens.]  
CAGGAGGGAGAGCCTTCCCAAGCAACAATCCAGAGCAGCTGTGCAAAACACGGTGCAT  
AAATAAGGCCCTCTGGACCATGAATGCGAGTCCGCTGAGCTGCTACCGGAGCCACGGT

GGTCATGGCTGCCAGAGCGCTCTGCATGCTGGGGCTGGTCTGGCCTTGCTGTCTCCAG  
CTCTGCTGAGGAGTACGTGGGCTGTCTGCAAAACAGTGTGCCGTGCCAGCCAAAGACAG  
GGTGGACTGGCGCTACCCCATGTCAACCCCAAGGAGTGCAACAACCGGGCTGCTGCTT  
TGACTCCAGGATCCCTGGAGTGCCTTGGTGTTCAGAGCCCTGACAGGGAAGCAGGAATG  
CACCTTCTGAGGCACCTCCAGCTGCCCCCGGCCGGGGATGCGAGGCTCGGAGCACCTC  
TGCCCGGCTGTGATTGTGTCAGGCACTGTTTCATCTCAGCTTTTCTGTCCCTTTGCTCCC  
GGAAGCGCTTCTGTGAAAGTTCATATCTGGAGCCTGATGTTAACGTAGTCCCATGCTC  
CACCCGAAAAAAAAAAAAAAAAAAAAA

>AAV16676 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

AAGCTCTTCTCAGAGACCAGCCACTAGCGCAGCTCGAGCGATGGCCTATGTCCCCGCAC  
CGGGCTACCAGCCACCTACAACCCGACGCTGCCTTACTACCAGCCATCCCGGCGGGC  
TCAACGTGGGAATGTCTGTTTACATCCAAGGAGTGCCAGCGAGCACATGAAGCGTCTCT  
TCGTGAACCTTTGTGTTGGGCAAGATCCGGCTCAGACGTGCGCTTCCACTTCAATCCGC  
GGTTTGGCGCTGGGACAAGGTGGTCTTCAACACGTTGCAAGGCGGGAAGTGGGCGAGCG  
AGGAGAGGAAGAGGAGCATGCCCTTCAAAAAGGGTGCCGCTTTGAGCTGGTCTTCATAG  
TCCTGGCTGAGCACTACAAGGTGGTGGTAAATGGAATCCCTTCTATGAGTACGGGCACC  
GGCTTCCCTACAGATGGTCAACCCACCTGCAAGTGGATGGGGATCTGCAACTTCAATCAA  
TCAACTTTCATCGAGGCCAGCCCTCCGGCCCGAGGACCCCGATGATGCCACCTTACC  
CTGGTCCCGGACATTGCCATCAACAGCTGAACAGCCTGCCACCATGGAAGGACCCCAA  
CCTTCAACCCGCTGTGCCATATTTGGGAGGCTGCAAGGAGGCTCACAGCTCGAAGAA  
CCATCATCATCAAGGGCTATGTGCTCCACAGGCAAGAGCTTTGCTATCAACTTCAAGG  
TGGGCTCTCAGGGGACATAGCTCTGCACATTAATCCCGCATGGGCAACGGTACCGTGG  
TCCGGAACAGCCTTCTGAATGGCTCGTGGGATCCGAGGAGAAGATCACCCACAACC  
CATTGTGTTCCGGACAGTCTTTGATCTGTCCATTGCTGTGGCTGGATCGCTTCAAGG  
TTTACGCCAATGGCCAGCACCTCTTTGACTTTGCCCATCGCCTCTCGGCTTCCAGAGGG  
TGGACACATTGGAAATCCAGGGTGTGTCACCTTGTCTATGTCCAGATCAATCTATTCT  
CTGGGGCCATAACTCATGGGAAAACAGAATTATCCCTTAGGACTCCTTTCTAAGCCCTTA  
ATAAATGTCTGAGGGTGTCTCAAAAAAAAAAAAAAAAAAAAAA

>AAV16677 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

GTTGATATTAACACAGTGAACCAACATGACACCTCTCTGAAACCTATTAGTGTCTCC  
TACAACCCAGCCACAGCCAAAGAAATTATCAATGTGGGCAATTCCTTCCATGTAAATTTT  
GAGGACAACGATAACCGATCAGTGTCTGAAAGGTGGTCTTCTCTGACAGCTACAGGCTC  
TTTCACTTCCATTTTCACTGGGCGAGTACAATGAGCATGGTTCAGAACATACAGTGGAT  
GGAGTCAAAATTTCTGCCGAGCTTACGTTGGCTCACTGGAATTCGCAAGTACTCCAGC  
CTTGTGTAAGCTGCTCAAGGCTGATGGTTTGGCAGTTATTTGGTGTTTTGTGTAAGGTT  
GGTGAAGGCAACCCAAAGCTGCAGAAAGTACTTGTATGCCCTCCAAGCAATTAACCAAG  
GGCAACAGAGCCCAATTCACAAATTTGACCCCTCTACTCTCTTCTTCCATCCCTGGAT  
TTCTGGACCTACCTTGGCTCTCTGACTCATCTCTCTTTATGAGAGTGAACCTGGATC  
ATCTGTAAGGAGAGCATCAGTGTCAAGTTCAGAGCAGTTGGCACAATTCCGGAGCCTTCTA  
TCAAT

>AAV16678 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

CGGCTCCGGGCGGGCGTGCCAGTACTAGAAGCGAGGCGCGCGGGACCATGGCGGGC  
GCGGCGGACGAGCGGAGTCCAGAGGCGAGAAGACGAGGAAGAGGAGGAGCAGTTGGTTCT  
GGTGAATTTATCAGGAATTTATGATTCAGACTTCTCTCAAAATGTGAAATAAATGCAA  
GGTTTGGGCATTGACACTGAGAGGCCATTTCTGGCAATGGACAGCTGTGTCTTTGTCTGG  
GGAGTATGAAGACACTCTAGGGACCTGTGTTATATTTGAAGAAATGTGAACATGCTGA  
TACAGAAGGCAATAATAAAACAGTGTCTAAATATAAATGCCATACAAATGAAGAAGCTCAG  
CATGACAAGAACTCTCTGACAGAGAAGAAGGAAGGAGAAGAAAACATAGGTGGGGTGA  
ATGGCTGCAAAATAAGGATATGGTTTCTCCCTTTGACCCAACAGGTTTGTAACTTTCTA  
CCATGAAATTGAGGACGAGGAAGTGGTACTTTACGCCCGTTAAATCTTTGGATTTGGG  
AGGGGGTGGGGTTTCAATG

>AAV16679 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

GTGGCAGAAGAAAGATAGGTTGGAGACAATTGATTGCTCGATGATATAAATGTTAAGTA  
CCATGAATGNATGCTGTAGGCTGGAATGCGCCAAGATAAAAGGTGGGGCATGGCATCAA  
AAGGTAGGTCAACATATTAATAATTCATGATTTGAAATATCCAGAAAAATATATAGACA  
GATCTATAGAGATAGAAACTGGTCTGCCAGGACTAGGGTTGCTAAGGATAAGGAGCT  
TCTTTTGGATGGTGAATAAACCATAAATATATTTGTCCTATTGTTGCAAACTTTGTG  
GAATATATTAACCCCGTTAATTGTAAGTCACTAAATGTCTCTCTTAAATTTAAGC  
TGTTTCTGGAAGAAGAAAGGAAAGNACCAAGGGGNAAAAAATTTT

>AAV16680 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

GCCCTGGGCTTTGGGGGGTCCCAACATGGTATGCAGAAATGTATGGTTACAGGTCAG  
TACAACCTCAGTCTCTAGAACCCCTCCACACTTCAGCTCTGCACCCACTTTCTGTCTATT  
TATTTATATAGGACTGTAGTTTCTTTAGTTCGAGAGCCTTTCGAAGCTTAATTTATATT  
CTTTCTTTGTACCTTTTCTTAAATTTACCAAGATATACACAAAGTAAATTAATGTT  
CTCTGTTTATATGCTTTATCTGATGGAGGCAAAATCTCTTATTTGTTGATCAAAGGGGC  
AAAAGAAATTTAGAGGCAAAATGAACAAGCGATAGGCTATTGCAACCTGAGAAGAGAACTG  
NTCCTTCCATCGTAAATTTAGNAGNCCAAGTAGGTAATGGGAACCAAGTTGTTACTTTT  
TTCTAGTAGTTATTTTCCCTTTTNNTTTGTGGTACCTCTTACAGNGNCCCAAACT  
CCATTTCTTTAAAGGGGTTTATGGGGGGCTTACTGCAGGTTAAAAATGGGGNCCAC  
CATTTTAAAGGGGGCTACCAGAAGGGAGGGGGTCCCNNTTNCNAAAAAAAAAAATTTG

>AAV16668 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

GCCAGGCGAGCTGGCTGCCACCAGGCGGTGATGTGAAGGTCAAGGCTGAAGCCCGGGAA  
CTGCTGGGCCACCCGTGGTCTCTGTGCTCTGTGGGTGCCAACTCACCACTTTGAT  
GGGCGCCGTGGTGCCCACTCTCCTGGTGTCTATGAAGCTCTCTTCCCGCTGCCAGGA  
CTACAGAATACCATCCCTGGTACCGTGTAGTTGCCGAAGTCAGATCTGCCATGGCAAA  
ACGGAGGCTGTGGGCGAGGTCCACATCTTCTCCAGGATGGGATGGTGACGTTGACTCCA  
AACAAAGGTGTGGGTGAATGGTCTCCGAGTGGATCTCCAGCTGAGAAGTTAGCATCT  
GTGTCCGTGAGTCTGACACTGATGGCTCCCTGCTAGTCCGCCAGAAGGCAAGGGTCCAG  
GTGTGGCTTGAGAGCAATGGGAAGGTGGCTGTGATTGTGAGCAATGACCATGTGGGAAA  
CTGTGTGGGGCCTKTGGAAAAATTTGACGGGGACAGACCAATGATTGGGATGATTTCC  
AGGAGAAGCCAGCGATTGGGGAATGGAGAGCGCAGGGACTTCTCYCCMCATGTTAATGG

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GCTTGWTCAGTTCATCCCACCAGGAACGAAGGATTTT

>AAV16669 US5733748-A PA (HUMA-) HUMAN PR 06-JUN-1995 PF 06-JUN-1995 Polynucleotide sequence of a colon-specific gene. [Hom  
o sapiens.]

CAGGACTGCGTGTGCACGGACAAGGTGGACAACAACACCCTGCTCAACGTCATCGCCTGC  
ACCCACGTGCCCTGCAACACCTCCTGCAGCCCTGGGTTCGAACTCATGGAGGCCCCCGGG  
GAGTGTCTGTAAGAAGTGTGAACAGACGCACTGTATCATCAAACGGCCCGACAACCAGCAC  
GTCATCCTGAAGCCCCGGGACTTCAAGAGCGACCCGAAGAACAACTGCACATTCTTCAGC  
TGCGTGAAGATCCACAACCAGCTCATCTCGTCCGTTTCCAACATCACCTGCCCCAACTTT  
GATGCCAGCATTTGCATCCCGGGCTCCATCACATTATGCCCAATGGATGCTGCAAGACC  
TGCACCCCTCGCAATGAGACCAGGGTGCCCTGCTCCACCGTCCCCGTCACCACGGAGGTT  
TCGTACGCCGGCTGCACCAAGACCGTCCCTCATGAATCATTTGCTCCGGGTCCCTGCCGGGACA  
TTTGTCTATGTACTCGGCCAAGGCCCAGGCCCTGGACCACAGCTGCTCCTGCTGCAAGAG  
GAGAAAACCAGCCAGCGTGAGGTGGTCTGAGCTGCCCCAATGGCGGCTCGCTGACACAC  
ACCTACACCCACATCGAGAGCTGCCAGTGCCAGGACACCGTCTGCGGGTCCCCACCGGC  
ACCTCCCGCCGGGCCCGGCGTTCCCTAGGCATCTGGGGAGCGGGTGAGCGGGGTGGGCA  
CAGCCCCCTTCACTGCCCTCGACAGCTTTACCTCCCCCGACCCCTCTGAGCCTCCTAAGCT  
CGGCTTCTCTCTCAGATATTATTGTCTGAGTTTTTGTTCAGTCCTTGCTTTCCAATA  
ATAAACTCAGGGGGACATGCAAAAAAAAAAAAAA

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GCTGATAGCACAGTCTCTGTCCAGACAGGAAAGGCAATAAACTTATTCAATCCAGGAACTCTTGGGGT  
AGGTGTGTGTTTTTCACATCTTAAAGGCTTACAGACCTGCGCTGGACAAATGTTCCATTCTGAAGGAC  
CTCTCCAGAAATCCGGATTGCTGAATCTTCCCTGTGCTTAGAAGGGCTCCAAACACCTCTTGACAATGG  
GAAACTGGGTGGTTAACCACCTGGTTTTTCAGTTTTGTCTGGTTGTTGGTTAGGGCTGAATGTTTTCTCT  
GTTTTGTGATGCTTCTCGAAATATGAGAAGGCCGACAAATACTACTACACAAGAAAAATCTTGGGTCA  
ACATTGGGCTGTGCCGAGCTCTGCTCTCTGCTTGAATTTAACAGCACGCTGATCTGCTTCTCTGTGT  
GTCGCAATCTGCTGTCTTCTGAGGGGCACCTGCTCATTTTGACGCGCACACTGAGAAAGCAATGGGA  
TCACAACCTCACCTTCCACAAGCTGGTGGCTATATGATCTGCTTACATACAGCTATTACATCATTGCA  
CACCTGTTTTAACTTTGACTGCTATAGCAGAAGCCGACAGGCCACAGATGGCTCCCTTGGCTTCCATTCTCT  
CCAGCTATCTCATGATGAGAAAAAGGGGGTCTTGGCTAAATCCCATCCAGTCCCGAAACACGACAGT  
GGAGTATGTGACATTCACACGCTTGTGCTCTCACTGGAGTGATGACAATAGCCTTGATTCTCATG  
GTAACCTTCAGCTACTGAGTTCACTCCGAGGAGTTATTTGAAGTCTTCTGGTATACCTACCACCTTTTGA  
TCTTCTATATCTTGGCTTAGGGATTACGGCATTTGGTGAATTTGTCGGGGTCAAAACAGAGGAGAGCAT  
GAATGAGAGTCATCTCGCAAGTGTGACAGATCTTTTGAGATGTGGGATGATCGTACTCCCACTGTAGG  
CGCCCTAAGTTTGAAGGGCATCCCCCTGAGTCTTGGAAAGTGATCTTGCACCGGTCAATCTTTATATCT  
GTGAAAGGATCTCCGGTTTTACCGCTCCAGCAGAAAGGTTGTGATTACCAAGGTTGTATGCAACCATC  
CAAAGTTTTGGAATTGACAGATGAACAAGCTGGCTTACAGCATGGAAGTGGGGCAGTATATCTTTGTTAAT  
TGCCCTCAATCTCTCTCTGGAATGGCATCTTTTACTTTGACCTCTGCTCCAGAGGAAGATTCTTCT  
CCATTCATATCCGAGCAGCAGGGGACTGGACAGAAATCTCATAGGGCTTTCGAACAACAATATTACAC  
AATTTCCAGGATTTGAAGTGGATGGTCCCTTTGGCACAGCCAGTGAGGATGTTTTCCAGTATGAAGTGGCT  
GTGCTGGTTGGAGCAGGAATTTGGGTACCCCCCTTGTCTTCTATCTTGAAATCCATCTGGTACAAATTC  
AGTGTGACAGACCACAACCTCAAAACAAAAAGATCTATTTCTACTGGATCTGCAGGGAGACAGGTGCCTT  
TTCTTGGTTCAACAACCTGTTGACTTCCCTGGAACAGGAGATGGAGGAATTAGGCAAGTGGGTTTTCTTA  
AACTACCGTCTCTTCTCACCGGATGGGACAGCAATATTGTTGGTCATGCAGCATTAACCTTTGACAAGG  
CCACTGACATCGTGACAGGTCTGAACAGAAAACCTCCTTTGGGAGACCAATGTGGGCAATGAGTTTTC  
TACAATAGCTACCTCCACCCCAAGTCTGTAGTGGGAGTTTTCTTATGTGGCCCTCGGACTTTGGCAAAG  
AGCCTGCGCAAAATGCTGTACCCGATATTCCAGTCTGGATCCTAGAAAGGTTCAATTCTACTTCAACAAAG  
AAAAATTTTGTAGTTATAGGAATAAGGACGGTAATCTGCATTTGTCTCTTTGTATCTTCAAGTAATTGAGT  
TATAGGAATAAGGACGGTAATCTGCATTTGTCTCTTTGTATCTTCAAGTAATTACTTGGTCTCNTCAGG  
TTTGANCAGTCACTTTAGGATAAGAAATGTGCTCTCAAGCCTTGACTCCCTGGTATTCTTTTGTATG  
CATTCAACTTCGTACTTGTAGCTTTCAGCAACTTAAAGACTTCTGAAGTCTTAAAGTCTGAANTCTTA  
AAGCCCATGGATCTTTCTCAGAAAAATACTGTAATCTTTCTGGACAGCCATGACTGTAGCAAGGCTT  
GATAGCAGAAAGTTGGTGGTTCANAATTATACAATAATCCAGGTGATTTTATCAATTCCAGTGTACC  
ATCTCCTGAGTTTGGTTTGTAACTTTTGTCTCTCCACCCCCACAGAAATTTAAGTAGGGTGACTT  
TTTAAATAAAAAATTTATTGAATAATTAATGATAAAACATAATAATAACATAAAATAAAACAAAAATTAC  
CGAGAACCCCATCCCCATATAACACCAACAGTGACATGTTTACTGTCACTTTTGATATGGTTTATCCAG  
TGTGAACAGCAATTTATTATTTTGTCTCATCAAAAAATAAGGATTTTTTTTCACTTGAAAAA